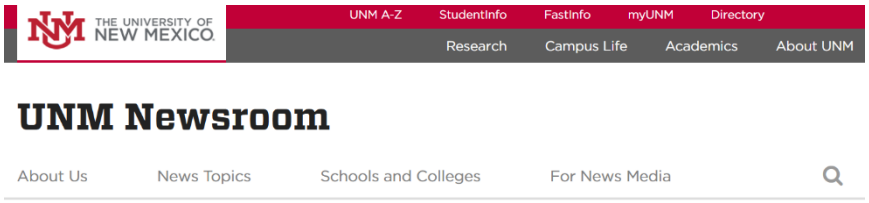
Statistical literacy class tells the story behind the statistics



Class is recommended for students in non-quantitative majors

Statistical literacy tells "the story behind the statistics," said Professor Milo Schield, faculty member and author of the course textbook at The University of New Mexico Department of Mathematics and Statistics. UNM was the first public university in the U.S. to adopt this course.

The Math 1300 Statistical Literacy class is recommended for students in non-quantitative majors: major that don't require a specific math course such as English, Art, Music, and Philosophy. It can be valuable for students in majors that deal primarily with observational studies such as political science, journalism, communication, sociology, social work, education, and business (management and marketing). It can serve as a bridge course for students in quantitative majors such as Psychology and Economics.

Statistical Literacy involves critical thinking about how everyday statistics are constructed and manipulated.

"Many everyday statistics are 'true,' but can change after taking something into account," Schield explained. "Today's college students need to understand what it means to 'take something into account' quantitatively in order to evaluate the statistics used to support many political and social arguments."

For example, a study found that vaccinated COVID cases were more likely to die than those who were unvaccinated. But after taking into account age and the fact that the elderly are more likely to be vaccinated and are more likely to die, the association reversed: Unvaccinated cases were more likely to die of COVID than vaccinated cases.

"Statistical Literacy is statistics for the 21st century," said Schield.

The goal of this critical thinking course is to help students read and evaluate the statistics they encounter in everyday life, for example, in statements, essays, tables and graphs.

The Statistical Literacy course focuses on the use of ordinary English to distinguish association from causation (disparity from discrimination), and to describe and compare counts, averages, rates, and percentages using percent, percentage, rate and chance named ratio grammars.

"For example, the percentage of women who run is not the same as the percentage of women among runners. This course shows students how to take into account the influence of a related factor using a simple weighted average. Math 1300 is a good course for those who have difficulty with symbolic or algebraic mathematics since it does not use computer software or algebra but uses the fractions, percentages, and weighted averages from 7th grade math," Schield said, adding that business students majoring in management, marketing, and information systems will also find this course valuable.

Students see value in Statistical Literacy, Schield noted.

> "The math problems make way more sense than a regular statistics class. It really helped me begin to think critically about *all* of the statistics I hear on the news."

Many students who took the class said they would recommend the course to a friend and that this course should be required of all college students for graduation. This fall, 174 students are enrolled in Statistical Literacy in-person or online.

Schield's textbook, *Statistical Literacy: Critical Thinking about Everyday Statistics*, was recently adopted by the New College of Florida. He is a Fellow of the American Statistical Association, U.S. Representative to the International Statistical Literacy Project, and Professor Emeritus at Augsburg University in Minnesota.

Source: http://news.unm.edu/news/statistical-literacy-class-tells-the-story-behind-the-statistics